



US006251107B1

(12) United States Patent
Schaer(10) Patent No.: US 6,251,107 B1
(45) Date of Patent: *Jun. 26, 2001

(54) EP CATHETER

(75) Inventor: Alan K. Schaer, San Jose, CA (US)

(73) Assignee: Cardima, Inc., Fremont, CA (US)

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/104,752

(22) Filed: Jun. 25, 1998

(51) Int. Cl. 7 A61B 18/18

(52) U.S. Cl. 606/41; 600/374; 600/549; 607/99; 607/113; 607/122

(58) Field of Search 606/41; 600/374, 600/381, 383, 549; 607/99, 113, 122

(56) References Cited

U.S. PATENT DOCUMENTS

4,966,597 10/1990 Cosman 606/50
5,373,850 * 12/1994 Kohno et al. 128/692

5,500,012 3/1996 Brucker et al. 607/122
5,531,781 * 7/1996 Alferness et al. 607/122
5,549,109 * 8/1996 Samson et al. 128/642
5,582,609 12/1996 Swanson et al. 606/39
5,682,899 * 11/1997 Nashet et al. 600/505
5,706,809 * 1/1998 Littmann et al. 600/381
5,769,847 * 6/1998 Panescu et al. 606/42
5,885,278 * 3/1999 Fleischman 606/41
6,129,724 * 10/2000 Fleischman et al. 606/41

* cited by examiner

Primary Examiner—Lee Cohen

(74) Attorney, Agent, or Firm—Heller Ehrman White & McAuliffe LLP

(57) ABSTRACT

A low profile intravascular electrophysiology (EP) device for the formation of linear lesions which has particular utility in the treatment of atrial fibrillation and flutter. The EP device of the invention has an elongated shaft with a proximal section, a distal section, and a plurality of at least partially exposed electrodes disposed on an outer surface of the distal section. The electrodes are spaced along a length of the distal section with at least one temperature sensor located between adjacent electrodes. High frequency, e.g. RF, electrical energy delivered to the electrodes on the distal shaft section of the EP device will form a linear lesion which terminates the fibrillation or flutter.

35 Claims, 3 Drawing Sheets

